

# MMWR

## MORBIDITY AND MORTALITY WEEKLY REPORT

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### *Epidemiologic Notes and Reports*

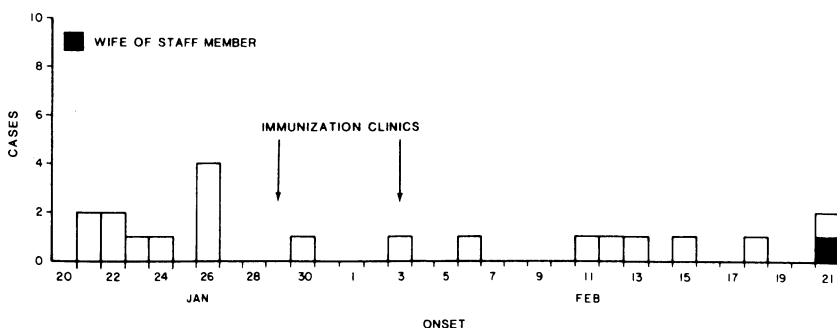
#### Rubella in Hospitals — California

During the first 26 weeks of 1982, 441 rubella cases were reported in Los Angeles, California. This is the highest number reported in that city during the first 26 weeks of any of the past 5 years, and represents 25.9% of the 1,703 cases reported in the entire United States during that period. Sixty-four (14.5%) of the 441 cases occurred among hospital staff, their household contacts, or hospitalized patients. Sixteen hospitals reported one or more cases, including two hospitals with six or more cases. The rest occurred in the community.

The largest outbreak occurred at a comprehensive-care facility in Los Angeles County with a daily census of 1,217 and a staff of 8,622; it illustrates many problems encountered during hospital rubella outbreaks and with hospital programs to control rubella. This hospital is divided into four units, each with its own physical plant: pediatric, obstetrical-gynecological, psychiatric, and general medical-surgical. Professional and support staff in these four distinct units have limited contact and interchange. Between January 21 and February 21, 1982, 19 rubella cases were reported among hospital personnel of the general medical-surgical unit (Figure 1), and one hospital staff member transmitted the infection to his wife. No clinical cases were identified among patients. The outbreak's source case was not identified. All cases met the clinical case definition of macular or maculopapular rash lasting 2-5 days, low grade or no fever (temperature < 38.9 C [102 F]) and at least two of the following signs or symptoms: posterior auricular or occipital adenopathy, arthralgia, coryza, or conjunctivitis. Diagnosis was confirmed for 12 of the cases on the basis of a 4-fold or greater rise in rubella hemagglutination-inhibition (HI) antibody titers between acute- and convalescent-phase serum specimens.

The patients' ages ranged from 22 to 63 years, with a median of 29 years; three were over 50 years of age. Eleven (55%) were female. Of the 19 hospital staff members with

**FIGURE 1. Rubella cases, comprehensive-care hospital — Los Angeles County, January-February, 1982**



*Rubella — Continued*

rubella, all of whom worked in the medical-surgical unit, 14 worked primarily in the pulmonary services division, three worked in medical intensive care, one worked in surgery, and one worked in the epidemiology office. The 19 patients were employed in the following job categories: six nurses, five physicians, four respiratory therapists, one nurse epidemiologist, one physical therapist, one clerk, and one ward aide. Two cases occurred in women in their first trimester of pregnancy and were diagnosed by a 4-fold or higher rise in rubella HI antibody titers. Both women elected to have therapeutic abortions.

Nine pregnant contacts of these 19 cases were identified (eight were personnel and one was the wife of a staff member with rubella). Six of these had documented rubella immunity before the onset of this outbreak, and their fetuses were considered not to be at risk of developing congenital rubella syndrome (CRS). The remaining three had documented evidence of no rubella antibodies before the outbreak; two of these susceptible women were in the first trimester, and one was later in her pregnancy. None of these three susceptibles developed serologic evidence of rubella infection. To date, no cases of CRS related to the hospital cases have been identified.

In January 1980, the hospital had initiated a policy requiring all new personnel working in high-risk hospital units (pediatric and obstetrical-gynecological) to demonstrate immunity to rubella.\* Rubella immunization was recommended but not required for persons working in the other two units. Seven cases occurred among persons hired after January 1980. Six had been serologically tested at the time of employment, and all lacked detectable rubella antibody. Of the 11 cases among persons hired for the medical-surgical unit before January 1980, two had been serologically tested before this outbreak and also lacked detectable rubella antibody. None of these eight known susceptibles who developed rubella worked in units subject to the mandatory immunization policy.

On January 29 and February 3, immunization clinics were held for personnel of the medical-surgical unit. Three hundred forty of the approximately 2,500 personnel in this unit were immunized at those clinics.

*Reported by PN Heseltine, MD, M Ripper, P Wohlford, Los Angeles County—University of Southern California Medical Center, S Huie, MPH, BP Weiss, MPH, SL Fannin, MD, MA Strassburg, DPH, Los Angeles County Dept of Health Svcs, J Chin MD, State Epidemiologist, California Dept of Health Svcs; Hospital Infections Program, Center for Infectious Diseases, Div of Immunization, Center for Prevention Svcs, CDC.*

**Editorial Note:** This report demonstrates the potential for rubella outbreaks among hospital personnel and their contacts. In the United States, more than 10 such outbreaks have been reported in the medical literature (1); many more have doubtless occurred. The potential for further hospital outbreaks exists as long as an estimated 10%-20% of hospital personnel lack detectable rubella antibody (2,3).

This outbreak shows that rubella among hospital personnel can have a substantial health impact. Cases occurred among staff members of all ages and both sexes, including two cases in health workers not generally considered to provide direct patient care. Only one case outside hospital personnel was documented, although further spread may have occurred to other contacts. Two therapeutic abortions occurred as a direct result of the outbreak.

Despite a large rubella outbreak in the community and some staff contact between units, only one of the four units was affected. This unit was not covered by the mandatory rubella vaccination policy; the mandatory policy in effect in two other units might have prevented transmission in those units.

The Immunization Practices Advisory Committee (ACIP) recommends that "health-care providers should carefully review the rubella immunity status of young adults and vaccinate those who do not have documented immunity. To protect susceptible female patients and

\*Immunity to rubella is defined as a documented history of rubella vaccination on or after the first birthday or documented presence of detectable rubella antibody.

*Rubella — Continued*

female employees, persons (both male and female) working in hospitals and clinics who might contract rubella from infected patients or who, if infected, might transmit rubella to pregnant patients should be vaccinated against rubella, unless there are contraindications" (4). This is supported by the American College of Obstetricians and Gynecologists (5). The American Hospital Association Advisory Committee on Infections within Hospitals also recommends that susceptible health-care personnel of both sexes and all ages who have contact with female patients of childbearing age should be immunized. It also states that "the hospital has a responsibility to protect its patients from infection. The need for this protection would appear to be sufficient reason for a policy obliging personnel who come in contact with pregnant patients to be tested for susceptibility to rubella and to be immunized if susceptible" (6).

Currently, four states have laws or regulations requiring proof of immunity to rubella in some hospital personnel. Special emphasis should be given to physicians who previously have not participated fully in voluntary vaccination efforts directed at health professionals (7, 8). Among persons for whom immunization is not required, vaccine acceptance has been suboptimal and disappointing. Mandatory programs are generally more effective (9). Routine serologic testing for all personnel with unknown immunity is not essential, since harmful effects from vaccinating immune persons are unknown. Additionally, problems frequently occur in followup and vaccination of those identified as susceptible.

Identifying exposed pregnant personnel and patients during rubella outbreaks among medical and paramedical personnel uses considerable time and money and results in time lost from work. Prevention can be accomplished by ensuring that all hospital personnel who might be at risk of exposure to patients infected with rubella or who might have contact with pregnant patients, be immune to rubella.

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## **Botulism and Commercial Pot Pie — California**

On August 3, 1982, a 56-year-old woman residing in Los Angeles County, California, developed diplopia, weakness, difficulty breathing, and chest pain. She had respiratory arrest on admission to the hospital but was intubated, resuscitated, and placed in intensive care. Examination showed complete bilateral ptosis, ophthalmoplegia, facial muscle weakness, and areflexia. Cerebrospinal fluid was normal except for increased glucose; Tensilon test was negative. She had a past history of seizure disorder, diabetes mellitus, and organic brain syndrome. An infectious disease consultant thought her subsequent fever was due to

*Botulism — Continued*

pneumonia secondary to aspiration, and he suspected botulism as the underlying cause of her illness.

The patient lives with her husband and grown son who both prepare meals for her and attempt a strict diet in consideration of her diabetes. When asked about the patient's food history before onset of illness, the husband and son named no likely suspects for botulism. No home-preserved foods had been served, and, with one exception, she had not eaten other foods that were not freshly prepared for her or were not also consumed by her husband and son. The exception was commercial beef pot pie, which was accidentally mishandled, then consumed by the patient 1 day before illness began.

The son had prepared the pot pie for an earlier evening meal. The frozen pie was baked in an oven for 40–45 minutes. As he was about to serve it to his mother, his father came home with some freshly cooked hamburgers just purchased at a take-out restaurant. The pot pie was put aside on an unrefrigerated shelf. Two and one-half days later, the son came home and found his mother had just consumed this pot pie without reheating it.

An uneaten portion of the pot pie, still in its metal plate, was retrieved by the family members. Type A botulism toxin was found in this pie by a mouse-inoculation test performed at a U.S. Department of Agriculture laboratory in Beltsville, Maryland, and type A toxin was also demonstrated in the patient's serum by the state's Microbial Disease Laboratory.

(Continued on page 45)

TABLE I. Summary—cases specified notifiable diseases, United States

Disease	3rd Week Ending			Cumulative, 3rd Week Ending		
	January 22, 1983	January 23, 1982	Median 1978-1982	January 22, 1983	January 23, 1982	Median 1978-1982
Aseptic meningitis	107	85	52	268	244	164
Encephalitis: Primary (arthropod-borne & unsp.)	21	13	10	54	33	28
Post-infectious	6	1	2	7	2	4
Gonorrhea: Civilian	17,486	19,857	19,589	53,107	58,170	52,402
Military	407	520	520	1,370	1,574	1,571
Hepatitis: Type A	507	382	510	1,208	1,013	1,265
Type B	444	356	286	1,124	934	802
Non A, Non B	59	14	N	130	47	N
Unspecified	161	154	172	394	417	447
Legionellosis	6	4	N	26	12	N
Leprosy	6	1	1	15	2	6
Malaria	10	17	17	24	36	36
Measles: Total	8	10	80	12	26	160
Indigenous	7	N	N	10	N	N
Imported*	1	N	N	2	N	N
Meningococcal infections: Total	60	56	56	150	143	143
Civilian	55	56	56	143	143	143
Military	5	-	-	7	-	-
Mumps	85	83	257	182	216	585
Pertussis	20	6	17	42	27	40
Rubella (German measles)	8	38	50	35	89	117
Syphilis (Primary & Secondary): Civilian	650	711	492	1,957	1,871	1,379
Military	11	7	7	34	25	23
Toxic-shock syndrome	4	N	N	15	N	N
Tuberculosis	357	439	429	957	1,030	1,072
Tularemia	5	2	1	8	3	4
Typhoid fever	2	4	4	16	18	14
Typhus fever, tick-borne (RMSF)	3	-	-	4	9	4
Rabies, animal	68	87	83	229	238	223

TABLE II. Notifiable diseases of low frequency, United States

	Cum. 1983		Cum. 1983
Anthrax	-	Plague	-
Botulism: Foodborne	-	Poliomyelitis: Total	-
Infant (Calif. 1)	2	Paralytic	-
Other	-	Psittacosis	4
Brucellosis (Va. 2)	4	Rabies, human	-
Cholera	-	Tetanus (N.Y. City 1)	3
Congenital rubella syndrome	1	Trichinosis	1
Diphtheria (Fla. 1)	1	Typhus fever, flea-borne (endemic, murine)	-
Leptospirosis	-		

\*One of the eight reported cases for this week was imported from a foreign country or could be directly traced to a known internationally imported case within two generations.

TABLE III. Cases of specified notifiable diseases, United States, weeks ending  
January 22, 1983 and January 23, 1982 (3rd week)

Reporting Area	Aseptic Menin- gitis	Encephalitis		Gonorrhea (Civilian)		Hepatitis (Viral), by type				Legionel- losis	Leprosy	Malaria
		Primary	Post-in- fectious			A	B	NA,NB	Unspeci- fied			
	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1982	1983	1983	1983	1983	1983	Cum. 1983	Cum. 1983
UNITED STATES	107	54	7	53,107	58,170	507	444	59	161	6	15	24
NEW ENGLAND	3	3	-	1,416	1,246	8	11	-	8	-	-	-
Maine	-	-	-	83	80	-	1	-	-	-	-	-
N.H.	-	-	-	36	51	1	-	-	-	-	-	-
Vt.	1	-	-	23	34	-	-	-	1	-	-	-
Mass.	1	3	-	656	495	6	7	-	7	-	-	-
R.I.	-	-	-	64	79	-	3	-	-	-	-	-
Conn.	1	-	-	554	507	1	-	-	-	-	-	-
MID ATLANTIC	9	8	-	5,800	6,076	31	44	7	15	-	2	4
Upstate N.Y.	5	3	-	583	796	9	20	4	9	-	-	1
N.Y. City	1	3	-	2,607	3,281	4	2	-	-	-	2	3
N.J.	2	1	-	866	719	18	22	3	6	-	-	-
Pa.	1	1	-	1,744	1,280	-	-	-	-	-	-	-
E.N. CENTRAL	9	14	1	6,122	8,430	43	25	2	10	1	1	1
Ohio	7	8	1	2,268	2,442	23	10	-	8	-	1	-
Ind.	U	-	-	273	1,463	U	U	U	U	U	-	-
Ill.	-	-	-	810	1,897	3	3	2	1	-	-	-
Mich.	2	6	-	2,126	1,965	17	12	-	1	1	-	1
Wis.	-	-	-	645	663	-	-	-	-	-	-	-
W.N. CENTRAL	7	1	-	2,700	2,519	8	11	1	2	-	-	1
Minn.	-	-	-	433	511	1	5	-	-	-	-	-
Iowa	3	1	-	308	244	-	-	1	-	-	-	-
Mo.	2	-	-	1,210	1,061	2	6	-	2	-	-	-
N. Dak.	-	-	-	25	30	-	-	-	-	-	-	-
S. Dak.	-	-	-	57	79	1	-	-	-	-	-	-
Nebr.	-	-	-	151	106	4	-	-	-	-	-	-
Kans.	2	-	-	518	488	-	-	-	-	-	-	1
S. ATLANTIC	35	10	4	13,226	15,969	44	122	8	19	2	-	2
Del.	1	-	-	341	236	1	-	-	-	-	-	-
Md.	3	1	-	1,985	2,489	2	21	3	1	-	-	1
D.C.	-	-	-	942	657	-	4	-	-	-	-	-
Va.	12	6	1	1,194	1,148	8	18	1	5	1	-	1
W. Va.	-	-	-	161	140	-	1	-	2	-	-	-
N.C.	5	2	-	1,517	2,740	4	15	-	2	-	-	-
S.C.	-	1	-	1,480	1,172	5	12	1	-	-	-	-
Ga.	2	-	-	2,371	2,917	7	21	-	-	-	-	-
Fla.	12	-	3	3,235	4,470	17	30	3	9	1	-	-
E.S. CENTRAL	13	2	1	5,052	4,246	43	36	3	-	1	-	-
Ky.	-	-	-	630	605	27	14	-	-	-	-	-
Tenn.	2	-	-	1,762	1,605	10	13	3	-	-	-	-
Ala.	11	2	1	1,674	1,141	3	8	-	-	1	-	-
Miss.	-	-	-	986	895	3	1	-	-	-	-	-
W.S. CENTRAL	7	5	-	7,815	9,051	96	43	1	65	-	2	-
Ark.	-	-	-	624	912	1	-	1	8	-	-	-
La.	-	-	-	982	1,169	13	11	-	1	-	-	-
Okla.	1	1	-	912	859	6	1	-	4	-	-	-
Tex.	6	4	-	5,297	6,111	76	31	-	52	-	2	-
MOUNTAIN	1	1	-	1,577	2,046	86	12	2	11	1	-	-
Mont.	-	-	-	86	104	2	-	-	1	-	-	-
Idaho	-	-	-	69	67	6	2	-	-	-	-	-
Wyo.	-	-	-	62	72	-	-	-	-	-	-	-
Colo.	-	-	-	367	581	8	2	-	1	-	-	-
N. Mex.	-	-	-	217	250	8	-	-	1	-	-	-
Ariz.	1	-	-	453	602	55	6	-	4	-	-	-
Utah	-	1	-	67	83	4	1	1	3	1	-	-
Nev.	-	-	-	256	287	3	1	-	1	-	-	-
PACIFIC	23	10	1	9,399	8,587	148	140	35	31	1	10	16
Wash.	4	1	-	359	716	3	6	2	-	-	-	-
Oreg.	-	-	-	367	515	11	7	2	-	-	-	2
Calif.	19	8	1	8,302	6,956	132	127	31	31	1	10	14
Alaska	-	-	-	179	241	-	-	-	-	-	-	-
Hawaii	-	1	-	192	159	2	-	-	-	-	-	-
Guam	U	-	-	-	4	U	U	U	U	U	-	-
P.R.	U	-	-	-	182	3	1	-	1	U	-	-
V.I.	U	-	-	19	16	U	U	U	U	U	-	-
Pac. Trust Terr.	U	-	-	-	21	U	U	U	U	U	-	-

N: Not notifiable

U: Unavailable

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending  
January 22, 1983 and January 23, 1982 (3rd week)

Reporting Area	Measles (Rubeola)					Menin- gococcal infections	Mumps			Pertussis			Rubella		
	Indigenous		Imported +		Total										
	1983	Cum. 1983	1983	Cum. 1983			Cum. 1982	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983	Cum. 1982	1983	Cum. 1983
UNITED STATES	7	10	1	2	26	150	85	182	216	20	42	27	8	35	89
NEW ENGLAND	-	-	-	-	1	7	5	8	36	-	1	2	-	1	4
Maine	-	-	-	-	-	-	-	1	4	-	-	-	-	-	-
N.H.	-	-	-	-	1	1	2	4	2	-	-	-	-	-	4
Vt.	-	-	-	-	1	-	-	-	1	-	1	-	-	-	-
Mass.	-	-	-	-	-	1	1	1	26	-	-	1	-	1	-
R.I.	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Conn.	-	-	-	-	-	5	2	2	2	-	-	1	-	-	-
MID ATLANTIC	-	-	-	-	8	15	2	6	14	4	9	3	1	1	3
Upstate N.Y.	-	-	-	-	4	9	1	3	4	3	6	2	1	1	1
N.Y. City	-	-	-	-	3	-	1	1	4	-	-	1	-	-	2
N.J.	-	-	-	-	-	2	-	2	2	1	3	-	-	-	-
Pa.	-	-	-	-	1	4	-	-	4	-	-	-	-	-	-
E.N. CENTRAL	-	-	-	-	1	26	44	88	69	1	9	6	-	3	9
Ohio	-	-	-	-	-	15	35	55	33	1	9	1	-	1	-
Ind.	U	-	U	-	-	-	U	-	6	U	-	-	U	-	1
Ill.	-	-	-	-	1	-	-	2	4	-	-	1	-	-	5
Mich.	-	-	-	-	1	10	8	30	20	-	-	3	-	1	1
Wis.	-	-	-	-	-	-	1	1	6	-	-	1	-	1	2
W.N. CENTRAL	-	-	-	-	-	10	14	21	12	2	3	-	-	3	4
Minn.	-	-	-	-	-	-	-	1	-	-	-	-	-	2	1
Iowa	-	-	-	-	3	-	11	15	3	1	1	-	-	-	-
Mo.	-	-	-	-	7	-	-	-	2	-	1	-	-	-	2
N. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S. Dak.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nebr.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kans.	-	-	-	-	-	-	3	5	7	1	1	-	-	1	1
S. ATLANTIC	-	-	-	-	7	30	3	10	35	4	5	3	5	8	5
Del.	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Md.	-	-	-	-	4	-	1	1	3	-	-	-	-	1	-
D.C.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Va.	-	-	-	-	7	5	2	5	3	1	1	-	-	-	5
W. Va.	-	-	-	-	-	-	-	3	21	3	3	1	3	4	-
N.C.	-	-	-	-	6	-	-	-	2	-	-	-	-	-	-
S.C.	-	-	-	-	5	-	-	-	2	-	-	1	-	-	-
Ga.	-	-	-	-	5	-	-	1	-	-	1	-	-	1	-
Fla.	-	-	-	-	5	-	-	-	3	-	-	1	2	2	-
E.S. CENTRAL	-	-	-	-	1	14	-	1	2	-	-	1	-	1	3
Ky.	-	-	-	-	4	-	-	-	1	-	-	-	-	1	3
Tenn.	-	-	-	-	1	4	-	1	1	-	-	1	-	-	-
Ala.	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-
Miss.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.S. CENTRAL	-	-	-	-	-	12	2	16	6	7	11	-	-	2	9
Ark.	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
La.	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
Okla.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tex.	-	-	-	-	10	2	15	5	7	11	-	-	-	2	9
MOUNTAIN	-	-	-	-	-	4	4	5	5	1	2	3	-	2	3
Mont.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Idaho	-	-	-	-	2	1	1	1	2	-	-	-	-	-	-
Wyo.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Colo.	-	-	-	-	1	1	1	1	1	-	-	-	-	-	1
N. Mex.	-	-	-	-	-	-	-	-	-	1	2	2	-	-	-
Ariz.	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-
Utah	-	-	-	-	1	2	2	3	1	-	-	-	-	2	1
Nev.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC	7	10	1	2	8	32	11	27	37	1	2	9	2	14	49
Wash.	-	-	-	-	13	-	-	3	9	-	-	-	-	-	1
Oreg.	-	-	-	-	3	-	-	-	-	-	-	2	-	-	-
Calif.	6	9	1†	2	7	14	7	19	28	1	2	7	2	14	47
Alaska	-	-	-	-	-	-	4	4	-	-	-	-	-	-	-
Hawaii	1	1	-	-	1	2	-	1	-	-	-	-	-	-	1
Guam	U	-	U	-	-	-	U	-	1	U	-	-	U	-	-
P.R.	U	-	U	-	2	2	5	6	2	-	-	-	-	-	-
V.I.	U	2	U	1	-	-	U	-	-	U	-	-	U	1	-
Pac. Trust Terr.	U	-	U	-	-	-	U	-	-	U	-	-	U	-	-

\*For measles only, imported cases includes both out-of-state and foreign importations.

U: Unavailable

† International

§ Out-of-state

TABLE III. (Cont.'d). Cases of specified notifiable diseases, United States, weeks ending  
January 22, 1983 and January 23, 1982 (3rd week)

Reporting Area	Syphilis (Civilian) (Primary & Secondary)		Toxic- shock Syndrome	Tuberculosis		Tula- remia	Typhoid Fever	Typhus Fever (Tick-borne) (RMSF)	Rabies, Animal
	Cum. 1983	Cum. 1982	1983	1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983	Cum. 1983
UNITED STATES	1,957	1,871	4	357	957	8	16	4	229
NEW ENGLAND	57	32	1	3	15	-	-	-	-
Maine	2	-	-	-	-	-	-	-	-
N.H.	-	-	-	-	-	-	-	-	-
Vt.	-	-	-	-	-	-	-	-	-
Mass.	36	22	-	2	5	-	-	-	-
R.I.	1	2	1	-	4	-	-	-	-
Conn.	18	8	-	1	6	-	-	-	-
MID ATLANTIC	216	267	-	77	199	-	2	-	8
Upstate N.Y.	10	18	-	12	42	-	2	-	7
N.Y. City	133	190	-	27	75	-	-	-	-
N.J.	39	22	-	13	37	-	-	-	-
Pa.	34	37	-	25	45	-	-	-	1
E.N. CENTRAL	71	117	-	38	138	-	2	-	12
Ohio	40	14	-	-	11	-	1	-	3
Ind.	9	17	U	U	11	-	-	-	-
Ill.	-	66	-	31	86	-	-	-	2
Mich.	13	13	-	7	25	-	1	-	-
Wis.	9	7	-	-	5	-	-	-	7
W.N. CENTRAL	21	42	1	7	22	4	-	2	33
Minn.	12	10	-	-	1	-	-	-	7
Iowa	2	1	1	3	7	-	-	-	12
Mo.	5	27	-	2	10	4	-	2	5
N. Dak.	-	1	-	-	-	-	-	-	3
S. Dak.	-	-	-	2	2	-	-	-	-
Nebr.	-	-	-	-	-	-	-	-	2
Kans.	2	3	-	-	2	-	-	-	4
S. ATLANTIC	494	497	1	79	222	2	3	-	87
Del.	3	2	-	1	1	-	-	-	-
Md.	29	35	-	14	56	1	-	-	37
D.C.	19	32	-	3	7	-	-	-	-
Va.	37	34	-	2	2	1	2	-	41
W. Va.	1	2	1	4	10	-	1	-	3
N.C.	50	45	-	1	2	-	-	-	-
S.C.	41	25	-	4	27	-	-	-	1
Ge.	93	102	-	14	33	-	-	-	4
Fla.	221	220	-	36	84	-	-	-	1
E.S. CENTRAL	155	140	-	33	95	-	-	2	16
Ky.	8	8	-	5	21	-	-	-	3
Tenn.	50	20	-	8	36	-	-	1	10
Ala.	72	51	-	11	29	-	-	1	3
Miss.	25	61	-	9	9	-	-	-	-
W.S. CENTRAL	502	530	-	25	53	1	-	-	29
Ark.	6	10	-	1	1	1	-	-	6
La.	108	60	-	10	12	-	-	-	1
Okla.	11	12	-	4	20	-	-	-	4
Tex.	377	448	-	10	20	-	-	-	18
MOUNTAIN	41	33	-	17	33	1	-	-	15
Mont.	2	-	-	-	3	-	-	-	14
Idaho	1	1	-	3	3	-	-	-	-
Wyo.	1	1	-	1	1	-	-	-	-
Colo.	8	15	-	-	-	-	-	-	-
N. Mex.	11	4	-	2	5	1	-	-	-
Ariz.	13	1	-	10	20	-	-	-	-
Utah	1	2	-	-	-	-	-	-	1
Nev.	4	9	-	1	1	-	-	-	-
PACIFIC	400	213	1	78	180	-	9	-	29
Wash.	-	7	-	1	4	-	-	-	-
Oreg.	3	8	1	4	9	-	-	-	-
Calif.	394	193	-	62	156	-	9	-	29
Alaska	-	1	-	-	-	-	-	-	-
Hawaii	3	4	-	11	11	-	-	-	-
Guam	-	-	U	U	-	-	-	-	-
P.R.	-	4	-	13	16	-	-	-	-
V.I.	-	-	U	U	-	-	-	-	5
Pac. Trust Terr.	-	-	U	U	-	-	-	-	-

U: Unavailable

**TABLE IV. Deaths in 121 U.S. cities,\* week ending  
January 22, 1983 (3rd week)**

Reporting Area	All Causes, By Age (Years)						P&I** Total	Reporting Area	All Causes, By Age (Years)						P&I** Total
	All Ages	≥65	45-64	25-44	1-24	<1			All Ages	≥65	45-64	25-44	1-24	<1	
<b>NEW ENGLAND</b>	745	513	160	45	9	18	59	<b>S. ATLANTIC</b>	1,250	749	323	105	29	44	48
Boston, Mass.	219	130	58	17	5	9	21	Atlanta, Ga.	147	82	36	16	6	7	4
Bridgeport, Conn.	49	33	10	4	-	2	4	Baltimore, Md.	139	93	33	6	4	3	3
Cambridge, Mass.	19	14	4	1	-	-	4	Charlotte, N.C.	70	48	14	3	2	3	2
Fall River, Mass.	34	26	7	1	-	-	3	Jacksonville, Fla.	105	56	35	9	4	1	8
Hartford, Conn.	67	36	23	6	-	2	2	Miami, Fla.	103	59	29	10	1	4	3
Lowell, Mass.	35	25	8	1	-	1	1	Norfolk, Va.	70	43	16	4	-	7	3
Lynn, Mass.	30	23	4	3	-	-	1	Richmond, Va.	86	49	27	7	2	1	6
New Bedford, Mass.	35	30	3	2	-	-	3	Savannah, Ga.	52	33	15	2	-	2	6
New Haven, Conn.	36	28	4	2	1	1	3	St. Petersburg, Fla.	116	96	10	8	2	-	3
Providence, R.I.	60	45	10	2	1	2	6	Tampa, Fla.	84	52	17	7	1	7	2
Somerville, Mass.	11	10	1	-	-	-	2	Washington, D.C.	228	106	75	32	7	8	2
Springfield, Mass.	53	41	8	2	1	1	2	Wilmington, Del.	50	32	16	1	-	1	6
Waterbury, Conn.	33	26	4	3	-	-	2								
Worcester, Mass.	64	46	16	1	1	-	5								
<b>MID. ATLANTIC</b>	2,684	1,773	606	170	57	78	109	<b>E.S. CENTRAL</b>	817	513	199	47	24	34	37
Albany, N.Y.	73	47	18	2	2	4	-	Birmingham, Ala.	144	86	38	8	4	8	4
Allentown, Pa.	19	15	4	-	-	-	-	Chattanooga, Tenn.	59	43	11	3	1	1	6
Buffalo, N.Y.	110	67	35	4	2	2	7	Knoxville, Tenn.	58	42	13	1	-	2	-
Camden, N.J.	51	30	16	2	1	2	1	Louisville, Ky.	155	95	39	5	6	10	12
Elizabeth, N.J.	35	25	9	1	-	-	3	Memphis, Tenn.	172	100	44	17	7	4	7
Erie, Pa.†	44	34	7	3	-	-	3	Mobile, Ala.	51	34	10	3	-	4	-
Jersey City, N.J.	63	40	18	4	1	-	-	Montgomery, Ala.	50	33	12	2	1	2	3
N.Y. City, N.Y.	1,468	968	319	111	30	40	46	Nashville, Tenn.	128	80	32	8	5	3	5
Newark, N.J.	84	53	15	7	3	6	7								
Paterson, N.J.	31	19	6	4	-	2	2	<b>W.S. CENTRAL</b>	1,454	808	366	143	59	78	64
Philadelphia, Pa.†	199	120	55	15	7	2	7	Austin, Tex.	87	41	15	6	3	2	4
Pittsburgh, Pa.†	91	55	24	4	2	6	3	Baton Rouge, La.	42	25	11	2	2	2	4
Reading, Pa.	31	27	3	-	1	3	1	Corpus Christi, Tex.	55	33	16	2	1	3	2
Rochester, N.Y.	138	101	21	9	2	5	11	Dallas, Tex.	198	98	58	20	9	11	5
Schenectady, N.Y.	23	18	4	-	1	-	1	El Paso, Tex.	66	38	18	4	2	4	5
Scranton, Pa.	35	25	9	-	-	1	3	Fort Worth, Tex.	136	85	28	12	6	5	10
Syracuse, N.Y.	88	61	19	2	2	4	6	Houston, Tex.	397	157	120	67	22	31	8
Trenton, N.J.	41	27	10	1	1	2	-	Little Rock, Ark. §	70	67	-	1	1	1	8
Utica, N.Y.	25	17	5	-	2	1	2	New Orleans, La.	66	37	16	5	1	7	1
Yonkers, N.Y.	35	24	9	1	1	-	4	San Antonio, Tex.	210	127	51	17	5	10	10
								Shreveport, La.	57	35	15	3	4	-	-
								Tulsa, Okla.	92	65	18	4	3	2	7
<b>E.N. CENTRAL</b>	2,603	1,683	621	157	65	77	109	<b>MOUNTAIN</b>	703	422	176	53	20	32	27
Akron, Ohio	52	33	9	5	3	2	-	Albuquerque, N.Mex.	92	43	32	14	3	-	6
Canton, Ohio	44	34	5	3	2	-	-	Colo. Springs, Colo.	36	27	3	2	2	2	3
Chicago, Ill.	684	391	191	57	23	22	16	Denver, Colo.	117	76	19	5	2	15	4
Cincinnati, Ohio	150	96	35	11	3	5	9	Las Vegas, Nev.	87	48	25	7	2	5	1
Cleveland, Ohio	204	130	50	12	6	6	2	Ogden, Utah	15	9	5	1	-	-	1
Columbus, Ohio	188	116	47	11	4	10	-	Phoenix, Ariz.	189	120	48	12	4	5	5
Dayton, Ohio	118	81	24	9	2	2	3	Pueblo, Colo.	17	9	4	2	1	1	-
Detroit, Mich.	286	185	78	16	6	1	27	Salt Lake City, Utah	50	25	16	4	1	4	2
Evansville, Ind.	60	51	7	1	-	1	4	Tucson, Ariz.	100	65	24	6	5	-	5
Fort Wayne, Ind.	47	36	8	2	1	-	3								
Gary, Ind.	15	7	5	2	-	1	-	<b>PACIFIC</b>	2,064	1,431	384	119	53	76	147
Grand Rapids, Mich.	74	58	10	3	2	1	11	Berkeley, Calif.	18	16	1	1	-	-	-
Indianapolis, Ind.	173	109	43	7	4	10	9	Fresno, Calif.	73	51	15	3	1	3	4
Madison, Wis.	46	29	9	4	2	2	7	Glendale, Calif.	53	48	5	-	-	-	-
Milwaukee, Wis.	145	100	31	7	1	6	1	Honolulu, Hawaii	73	42	15	10	3	3	5
Peoria, Ill.	52	34	14	3	-	1	4	Long Beach, Calif.	99	72	23	2	-	-	-
Rockford, Ill.	39	24	12	-	1	2	2	Los Angeles, Calif.	613	419	109	43	21	21	24
South Bend, Ind.	50	42	7	-	1	-	9	Oakland, Calif.	82	56	15	3	2	6	4
Toledo, Ohio	124	89	23	4	3	5	2	Pasadena, Calif.	41	35	3	1	1	1	3
Youngstown, Ohio	52	38	13	-	1	-	-	Portland, Oreg.	152	109	29	3	4	6	15
								Sacramento, Calif.	71	49	13	5	1	3	3
<b>W.N. CENTRAL</b>	851	629	148	21	22	31	49	San Diego, Calif.	162	105	28	15	7	7	18
Des Moines, Iowa	61	45	11	1	-	4	8	San Francisco, Calif.	153	106	37	4	3	3	5
Duluth, Minn.	34	29	4	-	-	1	3	San Jose, Calif.	187	117	42	11	7	10	27
Kansas City, Kans.	39	31	4	1	1	2	2	Seattle, Wash.	165	119	29	12	1	4	19
Kansas City, Mo.	133	86	34	5	5	3	10	Spokane, Wash.	73	48	15	5	1	4	11
Lincoln, Neb.	41	34	5	2	-	-	3	Tacoma, Wash.	49	39	5	1	1	3	6
Minneapolis, Minn.	125	87	20	2	6	10	5								
Omaha, Neb.	80	62	12	-	4	2	7								
St. Louis, Mo.	186	143	28	6	3	6	2								
St. Paul, Minn.	90	75	13	1	1	-	3								
Wichita, Kans.	62	37	17	3	2	3	6								
<b>TOTAL</b>	13,171	8,521	2,983	860	338	468	649								

\* Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

\*\* Pneumonia and influenza

† Because of changes in reporting methods in these 4 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

†† Total includes unknown ages.

§ Data not available. Figures are estimates based on average of past 4 weeks.



*Botulism — Continued*

**Editorial Note:** This is the third case of botulism associated with commercial pot pies reported from California (1,2); one other episode (involving two clinically diagnosed patients) was reported from Minnesota in 1960 (3). Mishandling of the pot pies occurred in three of these episodes, and mishandling was also suspected in the fourth. The known mishandlings consisted of leaving the baked pot pie in the oven with the pilot light on, thereby maintaining "incubator" temperatures overnight. The pies were then eaten with no (or insufficient) reheating to destroy toxin. Or, as in the present case, the baked pie sat out at room temperature for over 2 days during hot weather—conditions that also could simulate an incubator.

In these situations, it is suspected that the original baking killed competing organisms in the pies and eliminated much of the oxygen. The heat-resistant, anaerobic *Clostridium botulinum*, which was evidently present and can be found in many fresh, frozen, and other food products, was then presumably able to germinate and produce toxin under the crust during storage at warm, incubator-like temperatures. Products such as pot pies should be kept frozen before heating and ideally should be served hot after the first cooking. If any such products are to be saved, it should be quickly refrigerated, then reheated to hot temperatures. This would minimize any risk of botulinal poisoning.

*Reported in California Morbidity, November 12, 1982;(44).*

*References*

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## Update: Influenza Virus Activity — United States

Influenza type A(H3N2) virus has now been isolated from patients in 24 states. Nine of these (Florida, Idaho, Kansas, Louisiana, Maine, Missouri, Nevada, Oklahoma, and South Dakota) have reported their first isolates of the season from patients with onset from late December 1982 through mid-January 1983. The first influenza type B isolate from the United States this season was obtained from a 42-year-old male in Houston, Texas, who developed influenza on December 20. The first influenza type A(H1N1) isolates were obtained from two Chicago residents. The first, a 10-year-old male, had onset of illness on December 27, 1982, and was hospitalized with severe asthma on December 29. He recovered and was discharged on January 8. The other, a 26-year-old female, had typical influenza-like illness. Most of the influenza isolations mentioned above (except those in Idaho and South Dakota) have been associated with sporadic activity.

Minnesota is reporting widespread influenza activity with outbreaks in 35 of its 87 counties. Although the first reported outbreaks occurred in nursing home populations (1), all age groups are now affected, and school absenteeism is between 10% and 20% in many locations, elevated from an average baseline of 2%-7%.

For the weeks ending January 14 and 21, 1983, the elevated ratio of pneumonia and influenza deaths to total deaths in 121 U.S. cities indicates excess mortality related to influenza (2,3) (Figure 2). This parallels the steady increase in the number of influenza isolates and increased levels of influenza morbidity reported in January by some states.

*Reported by D Peterson, MSc, D Peterson, Minnesota State Dept of Health; P Glezen, Baylor College of Medicine, Houston, Texas; H Headrick, South Dakota State Dept of Health; A Hoffman, MD, R Muldoon, PhD, Cook County General Hospital, M Beem MD, University of Chicago, J Kusek, PhD, University of*

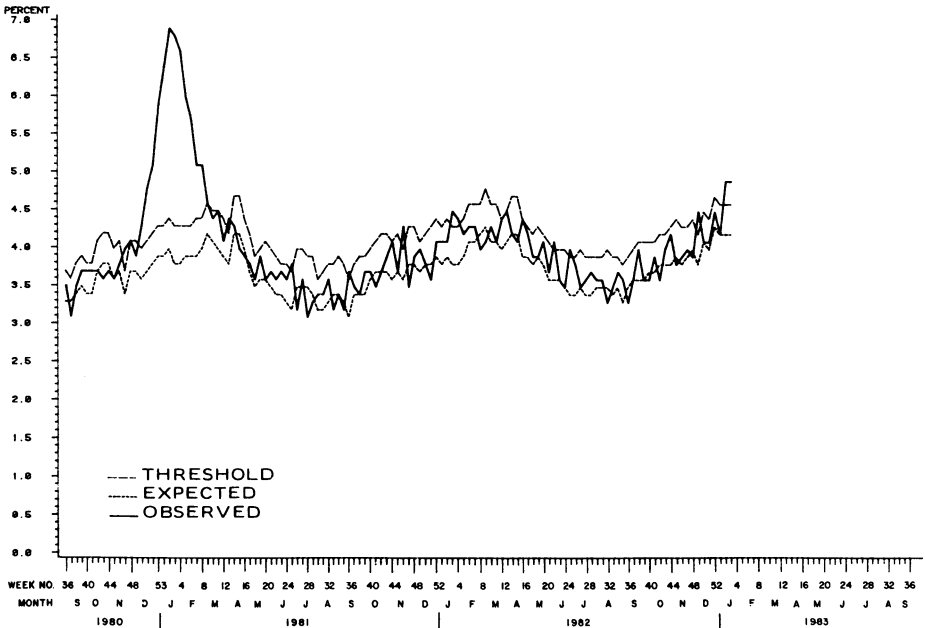
### Influenza — Continued

Illinois—Chicago, R March, R Haroff, Illinois State Dept of Public Health; E Buff, Florida State Dept of Health and Rehabilitative Svcs; P Reichelderfer, PhD, Sunrise Hospital, Las Vegas, Nevada; Respective state epidemiologists and laboratory directors; Consolidated Surveillance Activity, Epidemiology Program Office, Influenza Br, Div of Viral Diseases, Center for Infectious Diseases, CDC.

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**FIGURE 2. Observed and expected ratio of deaths attributed to pneumonia and influenza in 121 United States cities, 1980-1983**



### Current Trends

#### Hypothermia — United States

In 1979,\* excessive cold was reported as the underlying cause of 711 deaths among persons of all ages and races and both sexes (Table 1).

Deaths of males from excessive cold exceeded those of females (2.8:1 for all ages), especially in the 30- to 44-year age group (7.8:1). Persons in the 65- to 74-year category, representing 7% of the total U.S. population (1), accounted for 18% of these deaths. Persons 75 years and older, representing 4% of the U.S. population (1), accounted for 28%. Data for the last few years indicate the hypothermia death rate among the elderly may be increasing (2).

Hypothermia, defined as a core body temperature lower than 35 C (95 F), may be classi-

\*The latest year for which data are available for the entire United States.

*Hypothermia — Continued*

fied as acute, subacute, or chronic. Acute hypothermia is caused by a rapid loss of body heat, usually from immersion in cold water. Subacute hypothermia often occurs from exposure to cool weather (below 10 C [50 F]) outdoors, in combination with wind chill, wet or inadequate clothing, fatigue, and/or inadequate nutrition. Chronic hypothermia in predisposed persons generally occurs from exposure to cold temperatures (below 16 C [60 F]) indoors over a prolonged period. Predisposed persons have an impaired perception of cold; decreased mobility; and inadequate nutrition, clothing, and heating systems. This group typically includes the poor, the elderly, and drug or alcohol abusers.

Early signs include nonspecific disturbances of mental activity and judgment, which may be mistaken for other conditions and thus delay corrective measures (Table 2). Severe and life-threatening hypothermia occur when core body temperature falls below 30-32 C (85-90 F). Diagnosing the condition, therefore, requires recognizing early signs and symptoms and accurately measuring core body temperature with low-reading thermometers (below 35 C [95 F]). Treating patients with severe hypothermia consists of carefully rewarming them and monitoring their temperatures (3,4). All hypothermic patients—including those showing no signs of life—should be transported quickly and carefully to a medical facility. When appropriate, rescuers should start cardiopulmonary resuscitation. Very cold patients, if moved excessively, are susceptible to ventricular arrhythmias (4).

*Reported by Special Studies Br, Chronic Diseases Div, Program Svcs Br, Environmental Health Svcs Div, Center for Environmental Health, CDC.*

**Editorial Note:** Hypothermic mortality is probably underreported for four reasons: 1) its physical signs may not be recognized because they resemble other conditions; 2) hospitals may not use low-temperature thermometers; 3) medical personnel may be unaware of hypothermia's significance; and 4) even an autopsy cannot prove hypothermia as an underlying cause of death. Further study and better reporting are needed to explain the age and sex differences in the hypothermic death rates noted in Table 1 and to make such study valid.

Preventing hypothermia involves knowing of the condition and its risk factors and taking necessary precautions to avoid excessive and prolonged exposure to cold. Anyone who engages in boating, swimming, and outdoor winter activities should learn and practice safety rules and survival techniques. Everyone, especially the elderly and the debilitated, should have adequate food, clothing, shelter, and sources of heat. Electric blankets may effectively prevent hypothermia, even in inadequately heated houses. Additional information on hypothermia and safety rules may be obtained from sources listed in references 5-9.

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1. National Center for Health Statistics. Current estimates from the national health interview survey: United States, 1979, series 10; no. 141 (computer tape) Hyattsville, Maryland: National Center for Health Statistics, 1981.

**TABLE 1. Age, race, and sex for 711 deaths reportedly caused by excessive cold in 1979 (International Classification of Diseases Code E901) (7) — United States**

Age	White		All races		Sex ratio
	M	F	M	F	M:F
0-14	5	1	8	2	4.0:1
15-29	38	11	62	16	3.9:1
30-44	35	6	70	9	7.8:1
45-59	71	18	114	34	3.4:1
60-74	100	30	152	43	3.5:1
75+	80	58	118	80	1.5:1
Unknown	1	1	2	1	2.0:1
Total	330	125	526	185	2.8:1

*Hypothermia — Continued*

2. U.S. Senate. Hearing before the Special Committee on Aging, November 26, 1979. Washington, D.C.: U.S. Government Printing Office, 1980.
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7. CDC. Hypothermia: fact sheet. Atlanta: Centers for Disease Control, January 1982.
8. National Safety Council. Public safety fact sheet: hypothermia. Chicago: National Safety Council.
9. CDC. Exposure-related hypothermia deaths—District of Columbia, 1972-1982. *MMWR* 1982;31:669-671.

**TABLE 2. Signs of hypothermia by core body temperatures (Adapted from references 4 and 5)**

Core body temperature	Clinical signs
35 C (95 F)	Shivering, impaired ability to perform tasks
33-35 C (91-95 F)	Poor judgment, impaired mentation, slurred speech, clumsiness, dilated pupils, ileus
30-33 C (86-91 F)	Muscle rigidity, cyanosis, edema
27-30 C (81-86 F)	Loss of consciousness, slowing of respirations and heart rate
26-27 C (78-81 F)	Pulmonary edema, severe respiratory depression, severe cardiac arrhythmias leading to ventricular fibrillation
26 C (below 78 F)	Flat EEG, cardiac and respiratory arrest

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